

## **(5) SUMMARY OF CLAIMED SUBJECT MATTER**

The following listing of Independent Claims 1, 12, 13, 16, 26 and 31 with references to the specification by page and line number summarize the claimed subject matter:

Independent Claim 1: A device for performing surgery or therapeutic interventions on a patient, comprising:

a first non-invasive curvature sensor configured to be placed externally on a patient (*Appl. page 18, lines 28-3; Appl. page 19, lines 5-6*), the first non-invasive curvature sensor providing first external curvature data (*Appl. page 19, lines 9-10*);

imageable fiducials coupled to the first non-invasive curvature sensor (*Appl. page 18, line 18; Appl. page 19, lines 5-6*); and

an attachment fixture coupled to the first non-invasive curvature sensor (*Appl. page 18, line. 29*); and

a computer (*Appl. Page 19, lines 9-13*) configured to receive the first external curvature data and relate the curvature of the first non-invasive curvature sensor to: the location of the imageable fiducials; and a 3-D internal image set of the patient (*Appl. page 18, lines 27 to page 19, line 6; FIG. 8A, elements 800 & 805*).

Independent Claim 12: A device for performing surgery or therapeutic intervention on a patient, comprising:

an attachment fixture (*Appl. page 18, line 29*);

at least one imageable fiducial coupled to the attachment fixture (*Appl. page*

18, line 29; *Appl. page 19, lines 5-6*), the imageable fiducial being capable of being detected by a medical imaging system (*Appl. page 18, line 31*);

a non-invasive curvature sensor having a first end and a second end and capable of being coupled to the attachment fixture at the first end, the non-invasive curvature sensor configured to be placed externally on a patient, the non-invasive curvature sensor configured to provide external curvature data (*Appl. page 18, lines 28-31; Appl. page 19, lines 5-6*);

a tool connector coupled to the second end of the non-invasive curvature sensor (*Appl. page 15, lines 9-11*); and

a computer configured to receive the external curvature data and relate the curvature of the first non-invasive curvature sensor to: the location of the imageable fiducials; and a 3-D internal image set of the patient (*Appl. page 15, lines 15-21; Appl. page 18, lines 27-28*).

Independent Claim 13: A device for use in an image guided therapy or image guided surgery system, comprising:

a non-invasive curvature sensor configured to be applied externally to a portion of a patient (*Appl. page 18, lines 28-3; Appl. page 19, lines 5-6*), the non-invasive curvature sensor being adapted to measure and provide external curvature data (*Appl. page 19, lines 9-10*);

imageable fiducials located on the non-invasive curvature sensor (*Appl. page 18, line 18; Appl. page 19, lines 5-6*);

an attachment fixture coupled to the non-invasive curvature sensor (*Appl. page 18, line. 29*), the attachment fixture comprising an imageable fiducial; and  
a computer (*Appl. Page 19, lines 9-13*) configured to receive the external curvature data and relate the curvature of the non-invasive curvature sensor to: the location of the imageable fiducials; and a 3-D internal image set of the patient (*Appl. page 18, lines 27 to page 19, line 6; FIG. 8A, elements 800 & 805*).

Independent Claim 16: A device for generating a patient based frame of reference for an image guided therapy or image guided surgery system (*Appl. page 9, lines 12-15, lines 26-27; Appl. page 20, line 5-7*), comprising:

a non-invasive curvature sensor configured to be applied externally to a portion of a patient (*Appl. page 18, lines 28-3; Appl. page 19, lines 5-6*), the non-invasive curvature sensor being adapted to measure and provide external curvature data of the curvature of the portion of the patient (*Appl. page 19, lines 9-10*);

imageable fiducials coupled to the non-invasive curvature sensor (*Appl. page 18, line 18; Appl. page 19, lines 5-6*); and

an attachment fixture coupled to the non-invasive curvature sensor at a known position with respect to the non-invasive curvature sensor (*Appl. page 18, line. 29*); and

a computer (*Appl. Page 19, lines 9-13*) configured to receive the external curvature data and relate the curvature of the non-invasive curvature sensor to: the location of the imageable fiducials; and a 3-D internal image set of the patient (*Appl. page 18, lines 27 to page 19, line 6; FIG. 8A, elements 800 & 805*).

Independent Claim 26: A system for monitoring or enabling surgery on a patient at a distance (Appl. page 7, lines 4-5; Appl. Page 27, lines 14-15), comprising:

a first non-invasive curvature sensor configured to be placed externally on the patient (Appl. page 18, lines 28-3; Appl. page 19, lines 5-6), the first non-invasive curvature sensor providing first external curvature data (Appl. page 19, lines 9-10);

imageable fiducials coupled to the first non-invasive curvature sensor (Appl. page 18, line 18; Appl. page 19, lines 5-6);

an attachment fixture attached to the first non-invasive curvature sensor (Appl. page 18, line. 29);

a second non-invasive curvature sensor having a first end and a second end and capable of being coupled at the first end to the attachment fixture, the second non-invasive curvature sensor providing second external curvature data (Appl. page 13, lines 3-8);

a tool capable of being coupled to the second end of the second non-invasive curvature sensor (Appl. page 13, line 7); and

a computer configured to:

receive the first external curvature data (Appl. page 14, lines 14-15);

receive the second external curvature data (Appl. page 14, lines 14-15);

relate the curvature of the first non-invasive curvature sensor to: the location of the imageable fiducials (Appl. page 14, lines 15-17); and a 3-D internal image set of the patient (Appl. page 14, line 16);

provide an output of the curvature of the first non-invasive curvature sensor and the position and orientation of the tool coupled to the second end of the second non-invasive curvature sensor with respect to the attachment fixture (*Appl. page 14, lines 16-18*); and

communicate the output of the computer to a distant receiver using a communication device that is electronically coupled to the computer (*Appl. page 27, lines 3-8*).

Independent Claim 31: A device for conducting surgery or therapy on a body, comprising:

means for externally measuring the curvature of a body (*Appl. page 18, lines 28-3; Appl. page 19, lines 5-6*);

means for locating the position of the means for externally measuring the curvature of a body within a frame of reference (*Appl. page 14, line 20 to page 15, line 5*);

means for determining the position of a tool with respect to the means for externally measuring the curvature of a body (*Appl. page 10, lines 17-21*); and  
means for registering a 3-D internal image set of the body to the means for externally measuring the curvature of a body (*Appl. page 18, lines 27 to page 19, line 6; FIG. 8A, items 800 & 805*).